

**PELOMYIA OCCIDENTALIS WILLISTON (DIP.: TETHINIDAE)
NEW TO BRITAIN AND GERMANY**

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Introduction

IN 1979 AND 1982, several unfamiliar tethinids were caught by AGI at Walton-on-Naze, Essex. These were identified as belonging to the genus *Pelomyia*, which had not previously been recorded from the Palaearctic region. The species was found to be identical to a North American species, but establishing the correct name of this species proved difficult. Examination of the types showed that the nomenclature of North American *Pelomyia* was very confused, but that the correct name for the British flies was *Pelomyia occidentalis* Williston, a species first described from California in 1893.

In 1913, Melander (incorrectly) declared *P. occidentalis* a synonym of *P. coronata* (Loew, 1865) and it was using the latter name that Szadziewski (1983) recorded *Pelomyia* from Poland. In 1980, Hardy and Delfinado described *P. steyskali* from Hawaiian and North American material, having concluded that their species was different from *P. coronata*. Roháček (1992) recorded *P. steyskali* from Czechoslovakia and Hungary, and also referred Szadziewski's records to this species. None of these recent authors had examined the types of *P. coronata* or *P. occidentalis*, but had simply accepted the synonymy which had been repeated in the literature since Melander (1913).

Further specimens of *Pelomyia* were caught in Britain between 1982 and 1997, but the publication of these records was delayed until the nomenclatural problems were cleared up. A complete revision of *Pelomyia* is being published by Foster and Mathis (in press). They show that *P. occidentalis* is a good species, not the same as *P. coronata*, and that *P. steyskali* is a junior synonym of *P. occidentalis*. All the previously published records of *Pelomyia* from Europe and Hawaii (Mathis & Munari, 1996) should be assigned to *P. occidentalis*. Now that the taxonomy of the genus has at last been sorted out, it is possible to present an account of the occurrence of *Pelomyia* in Britain, together with a record from Germany.

The holding collections are as follows:

- DAS – D.A.Smith private collection
- JHC – J.H.Cole private collection
- NCM – Castle Museum, Norwich
- NHM – Natural History Museum, London
- UMO – Hope Entomological Collections, Oxford University Museum of Natural History
- WAE – W.A.Ely private collection

***Pelomyia occidentalis* Williston, 1893**

ENGLAND: MIDDLESEX: Isleworth, TQ1575, 5 - 21 May 1999, J. W. Ismay, partially clear dry grassland (20♂8♀ UMO, NCM).

ESSEX: Thurrock, TQ5876, 11 August - 20 September 1996, P. Harvey, pan traps in *Phragmites* bed and on sea wall, pitfall trap beside lagoon (7♂ 1♀ DAS); Purfleet, Dolphin Quarry, TQ565786, 5 September 1995, C. W. Plant, swept from short vegetation on cliff-top of chalk quarry (1♀ UMO); Colne Point, TM1112, 28 August - 1 November 1991, P. Harvey, pitfall trap in dunes (1♀ DAS); Walton-on-Naze, TM2623, 9 August 1979 & 3 August 1982, A. G. Irwin, swept from dry saline dykes behind sea-wall, from sparse vegetation beside lagoon and from grass on low sandy cliffs (6♂3♀ NCM); Walton-on-Naze, TM2624, 11 August 1992, D. A. Smith, swept saltmarsh and sand dune (1♂ DAS).

LINCOLNSHIRE: Chapel St Leonards, TF5672, 15 August, 1997, W.A. Ely, swept from stabilised dunes and low sandy cliffs (1♀ WAE).

S. YORKSHIRE: Rotherham, SK426931, 7 August 1991, W.A.Ely, swept open scrub on dry soil on urban wasteland close to railway line (1♀ WAE).

DURHAM: Horden Cliffs, NZ456409, 21 July 1982, J. H. Cole, herb-rich soft cliffs (2♂2♀ JHC).

GERMANY: LOWER SAXONY: Lüneburger Heide [Luneburg Heath], near Munster Lage, 15 June - 7 July 1960, J. C. Deeming (1♂ NHM). This specimen is particularly interesting as it represents the first known specimen from Europe, predating the earliest record in Roháček (1992) by at least two weeks.

Identification

Mathis and Munari (1996) provide a key to tethinid genera. In Collin's key to the British Tethinidae (Collin, 1960), *Pelomyia* will run to *Pelomyiella*, from which it can be separated by the presence of a shining peristomal ridge, weak acrostichal bristles and just one fronto-orbital bristle. Amended couplets are as follows:

1 (4) Genae bearing few to many scattered setulae above the ventral row of peristomal setae. Acrostichal setulae sparse or absent.....*Pelomyiinae*

2 (3) 2 fronto-orbital setae (though the anterior seta in *P. mallochi* is very short and weak, sometimes difficult to see), face and peristoma microtomentose, without shiny stripes. Acrostichal setulae absent.....
Pelomyiella

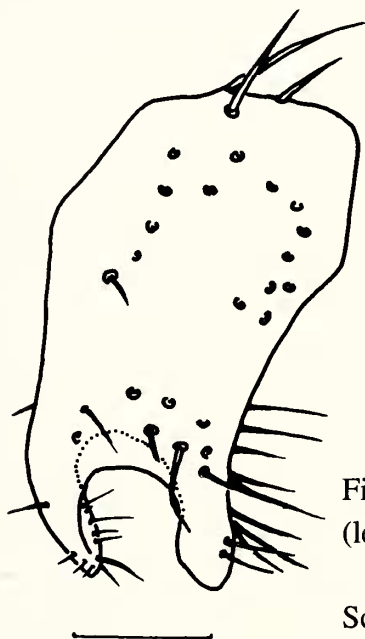
3 (2) 1 strong fronto-orbital seta, face with 2 narrow shiny stripes ventrally, each continuous with a shiny peristomal ridge (Fig. 1). A few short and weak acrostichal setulae present.....*Pelomyia*

4 (1) Genae bare except for a row of ventral or near-ventral peristomal setae. Acrostichal setulae in two or more complete or nearly complete rows. *Tethininae*

Fig. 1. *Pelomyia occidentalis* head.

Scale line 0.1 mm.

Only one species of *Pelomyia* has been found outside the Americas, but it is conceivable that another species may be introduced to Europe at some time. *P. occidentalis* can be told from other known species by the following combination of characters: mesonotum grey-dusted with brown stripes along the dorsocentral and acrostichal rows; fore-coxa white with white dusting; all femora and tibiae dark with grey/brown dusting, at most slightly paler on basal half. In addition the male epandrium is distinctive, having bifurcate ventro-lateral lobes (Fig. 2). Two other species have a similar epandrium, but in both of these the mid-tibia is entirely yellow.

Fig. 2. *Pelomyia occidentalis* epandrium (left lateral view).

Scale line 0.1 mm.

Biology and history

Nothing is known of the immature stages of *Pelomyia*. *P. occidentalis*, like its close relative *P. coronata*, is widely distributed in North America, although there are fewer records from the eastern states. It is often associated with water, although not always, and the water quality varies, from fresh to saline

and from clean to polluted (Foster & Mathis, in press). The British records support this impression and complement the other European records which are from comparable, though different habitats. Szadziewski's (1983) records are from inland *Salicornia* marshes in Poland, whereas all the Czechoslovak specimens were from synanthropic habitats - "water badly polluted by rotting communal waste", slaughterhouses and a mink farm (Roháček, 1992).

Until something is known about its life-history, it would be difficult to even speculate on the mechanism of this species' dramatic range expansion, but it seems certain that it will become established at many more sites in Britain and Europe.

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